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STRAUB & POKOTYLO 620 TINTON AVENUE BLDG. B, 2ND FLOOR TINTON FALLS, NJ 07724			TORRES, JUAN A	
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			2631	

DATE MAILED: 09/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/943,811

Applicant(s)

LAROIA, RAJIV

Examiner

Juan A. Torres

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 8-13, 15-20, 22-39, 41, 42, 44, 51-55 and 57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-13, 15-20, 22-39, 41, 42, 44, 51-55 and 57 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The modifications to the drawings were received on 07/21/2005. These modifications are accepted by the Examiner.

Specification

The modifications to the specification were received on 07/21/2005. These modifications are accepted by the Examiner.

Claim Objections

In view of the amendment filed on 07/21/2005, the Examiner withdraws claim objections of claim 2 of the previous Office Action.

Claim Rejections - 35 USC § 112

In view of the amendment filed on 07/21/2005, the Examiner withdraws claim rejections under 35 USC 112 of claim 56 of the previous Office Action.

Allowable Subject Matter

The indicated allowability of claims 7-8, 9, 11, 14, 16, 21, 22, 26, 27-39, 47 and 58 is withdrawn in view of the newly discovered reference(s) to Jones (US 6876675 B1) and Behrens (US 5903857 A). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

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applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 27-39 are rejected under 35 U.S.C. 102(e) as being anticipated by Jones (US 6876675 B1).

As per claim 27 Jones discloses generating a multi-part prefix from a first periodic signal, the step of generating a multi-part prefix from the first periodic signal including performing a cyclic extension operation on the first periodic signal to generate a cyclic prefix portion (figure 5 block 502 column 6 line 58 to column 7 line 6); generating a continuity prefix portion (figure 5 block 504 column 6 line 58 to column 7 line 6); and appending the cyclic prefix portion to the end of the continuity prefix portion (figure 5 blocks 502 and 504 column 6 line 58 to column 7 line 6).

As per claim 28 Jones discloses claim 27. Jones also discloses processing the cyclic prefix portion to generate the continuity prefix portion from the cyclic prefix portion (figure 5 block 504 column 6 line 58 to column 7 line 6).

As per claim 29 Jones discloses claim 28. Jones also discloses processing a preceding periodic signal to generate the continuity prefix portion from the preceding periodic signal (column 2 lines 34-44 and figure 5 blocks 502 and 504 column 6 line 58 to column 7 line 6).

As per claim 30 Jones discloses claim 27. Jones also discloses processing the cyclic prefix portion and a preceding periodic signal to generate the continuity prefix portion from both the cyclic prefix portion and the preceding periodic signal (column 2 lines 34-44 and figure 5 blocks 502 and 504 column 6 line 58 to column 7 line 6).

As per claim 31 Jones discloses claim 30. Jones also discloses performing a cyclic extension operation on the cyclic prefix portion to generate a first cyclic extension (figure 5 block 502 column 6 line 58 to column 7 line 6); performing another cyclic extension operation on the preceding periodic signal to generate a second cyclic extension, the first and second cyclic extensions corresponding to a signal time period which is the same for both the first and second cyclic extensions (figure 5 block 502 column 6 line 58 to column 7 line 6); and combining the first and second cyclic extensions corresponding to said signal time period to generate said continuity prefix portion including windowing the combined cyclic extensions using an attenuating window (figure 5 blocks 502 and 504 column 6 line 58 to column 7 line 6).

As per claim 32 Jones discloses claim 31. Jones also discloses copying a portion of the signal upon which said cyclic extension operation is performed (figure 5 blocks 502 and 504 column 6 line 58 to column 7 line 6).

As per claim 33 Jones discloses claim 27. Jones also discloses that the continuity prefix portion has a frequency, which is different from the frequency of the first periodic signal but has a phase at the point where the cyclic prefix portion is appended to the continuity prefix portion that is the same as the phase of the beginning of the cyclic prefix portion (figure 6 block 604 column 7 line 8 to column 8 line 31).

As per claim 34 Jones discloses claim 27. Jones also discloses that the continuity prefix portion has a phase at the beginning of the continuity prefix portion that is the same as the phase of the end of a preceding periodic signal (figure 5 blocks 502 and 504 column 6 line 58 to column 7 line 6).

As per claim 35 Jones discloses claim 27. Jones also discloses generating for each of the N periodic signals, other than the first periodic signal, a separate multi-part prefix from a corresponding one of the N periodic signals, thereby generating $N-1$ multi-part signal prefixes in addition to the multi-part prefix generated from the first periodic signal (figure 5 blocks 502 and 504 column 6 line 58 to column 7 line 6).

As per claim 36 Jones discloses claim 35. Jones also discloses prepending each of the generated $N-1$ multi-part prefixes and the generated multi-part prefix generated from the first periodic signal to the corresponding ones of the N periodic signals from which the multi-part prefixes were generated (figure 5 blocks 502 and 504 column 6 line 58 to column 7 line 6).

As per claim 37 Jones discloses claim 36. Jones also discloses filtering each of the N periodic signals with prepended multi-part prefixes in parallel (figure 5 blocks 502 and 504 column 6 line 58 to column 7 line 6); and transmitting the filtered N periodic signals with prepended multi-part prefixes into a communications channel (figure 5 blocks 502 and 504 column 6 line 58 to column 7 line 6).

As per claim 38 Jones discloses claim 37. Jones also discloses broadcasting different ones of the N periodic signals using different antennas (column 4 lines 48-61).

As per claim 39 Jones discloses claim 38. Jones also discloses allowing the N broadcast periodic signals to combine in the communications channel to form an N tone OFDM signal (figure 5 blocks 502 and 504 column 6 line 58 to column 7 line 6).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 6, 8-10 and 41-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cimini (US 6005876) (here after Cimini1) in view of Cimini (US 5914933) (hereafter Cimini2), and further in view of Jones (US 6876675 B1).

As per claim 1 Cimini1 discloses a multi-tone signal communications method for communicating information using NxM tones, where NxM is a positive integer greater than one, the method comprising: generating NxM signals, each one of the NxM signals corresponding to a different one of the NxM tones; and transmitting the NxM signals into a communications channel using M antennas (Figure 3 column 2 lines 25-30), where M is an integer and where $1 \leq M \leq NxM$ (Figure 3 column 3 lines 15-23). Cimini1 doesn't disclose that the signals are analog signals. The system disclosed by Cimini1 can be used to transmit analog signals instead of digital signals. The system disclosed by Cimini1 transmitting analog or digital signals are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify the system using analog signals in the technique disclosed by Cimini1. The suggestion/motivation for doing so would have been to reduce the complexity of the system transmitting analog signals because the use of an analog to digital converted is not needed. Cimini1 doesn't disclose that each

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of the analog signals includes a periodic signal representing a symbol to be transmitted during said symbol transmission period, and separately generating signal prefixes, one signal prefix being generated for each one of the analog signals from the one of the periodic signals included in the corresponding one of the analog signals. Cimini2 discloses wherein each of the analog signals includes a periodic signal representing a symbol to be transmitted during said symbol transmission period, and separately generating signal prefixes, one signal prefix being generated for each one of the analog signals from the one of the periodic signals included in the corresponding one of the analog signals (Figure 3 column 5 lines 56-62). Cimini1 and Cimini2 teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the signal prefix technique disclosed by Cimini2 in each of the antennas lines disclosed by Cimini1. The suggestion/motivation for doing so would have been to reduce the Inter-Symbol Interference (Cimini2 column 10 line 66 to column 11 line 21). Neither Cimini1 or Cimini2 disclose that each of the N signal prefixes including multiple parts and wherein the step of separately generating N signal prefixes includes, for each one of the N analog signals: i) generating a first cyclic prefix part from the included periodic signal representing the current symbol; and ii) generating a second prefix part from the included periodic signal representing the preceding symbol and from the first cyclic prefix part. Jones discloses each of the N signal prefixes including multiple parts and wherein the step of separately generating N signal prefixes includes, for each one of the N analog signals: i) generating a first cyclic prefix part from the included periodic signal

representing the current symbol (figure 5 block 502 column 6 line 58 to column 7 line 6); and ii) generating a second prefix part from the included periodic signal representing the preceding symbol and from the first cyclic prefix part (figure 5 block 504 column 6 line 58 to column 7 line 6). Cimini1, Cimini2 and Jones are analogous art because they are from the same field of endeavor. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to integrate in the multi-tone method disclosed by Cimini1 and Cimini2 the supplemental cyclic prefix disclosed by Jones. The suggestion/motivation for doing so would have been to facilitate synchronization (Jones abstract). Therefore, it would have been obvious to combine Cimini1, Cimini2 with Jones to obtain the invention as specified in claim 1.

As per claim 2 Cimini1, Cimini2 and Jones disclose claim 1. Cimini1 also discloses that the number of tones ($M \times N$) could be the same than the number of antennas (M) ($N=1$) (Figure 3 column 4 lines 53-55). Cimini1, Cimini2 and Jones are analogous art because they are from the same field of endeavor. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to integrate in the multi-tone method disclosed by Cimini1 and Cimini2 the supplemental cyclic prefix disclosed by Jones. The suggestion/motivation for doing so would have been to facilitate synchronization (Jones abstract). Therefore, it would have been obvious to combine Cimini1, Cimini2 with Jones to obtain the invention as specified in claim 2.

As per claim 3 Cimini1, Cimini2 and Jones disclose claim 1. Cimini1 also discloses amplifying each of the $M \times N$ analog signals prior to transmitting said $M \times N$ analog signals (Figure 3 column 3 lines 18-19). Cimini1, Cimini2 and Jones are

analogous art because they are from the same field of endeavor. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to integrate in the multi-tone method disclosed by Cimini1 and Cimini2 the supplemental cyclic prefix disclosed by Jones. The suggestion/motivation for doing so would have been to facilitate synchronization (Jones abstract). Therefore, it would have been obvious to combine Cimini1, Cimini2 with Jones to obtain the invention as specified in claim 3.

As per claim 4 Cimini1, Cimini2 and Jones disclose claim 3. Cimini1 also discloses that the analog signals has a duration corresponding to at least a symbol transmission period (figure 1 column 3 lines 9-46). Cimini1, Cimini2 and Jones are analogous art because they are from the same field of endeavor. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to integrate in the multi-tone method disclosed by Cimini1 and Cimini2 the supplemental cyclic prefix disclosed by Jones. The suggestion/motivation for doing so would have been to facilitate synchronization (Jones abstract). Therefore, it would have been obvious to combine Cimini1, Cimini2 with Jones to obtain the invention as specified in claim 3.

As per claim 6 Cimini1, Cimini2 and Jones disclose claim 4. Cimini1 also discloses that the analog signals have a duration corresponding to multiple symbol transmission periods (Figure 3 column 4 lines 50-53). Cimini1, Cimini2 and Jones are analogous art because they are from the same field of endeavor. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to integrate in the multi-tone method disclosed by Cimini1 and Cimini2 the supplemental cyclic prefix disclosed by Jones. The suggestion/motivation for doing so would have been to

facilitate synchronization (Jones abstract). Therefore, it would have been obvious to combine Cimini1, Cimini2 with Jones to obtain the invention as specified in claim 6.

As per claim 8 Cimini1, Cimini2 and Jones disclose claim 1. Jones also discloses generating a second prefix part includes cyclically extending the periodic signal representing the included preceding symbol and cyclically extending the first cyclic prefix part to correspond to the same time period (figure 5 block 504 column 6 line 58 to column 7 line 6); and combining and attenuating the cyclically extended portion of the first cyclic prefix part and the cyclically extended portion to the included periodic signal representing the preceding symbol (figure 5 blocks 502 and 504 column 6 line 58 to column 7 line 6). Cimini1, Cimini2 and Jones are analogous art because they are from the same field of endeavor. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to integrate in the multi-tone method disclosed by Cimini1 and Cimini2 the supplemental cyclic prefix disclosed by Jones. The suggestion/motivation for doing so would have been to facilitate synchronization (Jones abstract). Therefore, it would have been obvious to combine Cimini1, Cimini2 with Jones to obtain the invention as specified in claim 8.

As per claim 9 Cimini1 discloses a multi-tone signal communications method for communicating information using $N \times M$ tones, where $N \times M$ is a positive integer greater than one, the method comprising generating $N \times M$ signals, each one of the $N \times M$ signals corresponding to a different one of the $N \times M$ tones (Figure 3 column 2 lines 24-37 and column 4 lines 1-36); separately amplifying each of the $M \times N$ analog signals prior to transmitting said $M \times N$ analog signals (Figure 3 column 3 lines 18-19); and transmitting

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the $N \times M$ signals into a communications channel using M antennas (Figure 3 column 2 lines 24-37 and column 4 lines 1-36), where M is an integer and where $1 \leq M \leq N \times M$ (Figure 3 column 3 lines 15-23). Cimini1 doesn't disclose that the signals are analog signals. The system disclosed by Cimini1 can be used to transmit analog signals instead of digital signals. The system disclosed by Cimini1 transmitting analog or digital signals are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify the system using analog signals in the technique disclosed by Cimini1. The suggestion/motivation for doing so would have been to reduce the complexity of the system transmitting analog signals because the use of an analog to digital converted is not needed. Cimini1 doesn't disclose that each of the analog signals includes a periodic signal representing a symbol to be transmitted during said symbol transmission period, and separately generating signal prefixes, one signal prefix being generated for each one of the analog signals from the one of the periodic signals included in the corresponding one of the analog signals. Cimini2 discloses wherein each of the analog signals includes a periodic signal representing a symbol to be transmitted during said symbol transmission period, and separately generating signal prefixes, one signal prefix being generated for each one of the analog signals from the one of the periodic signals included in the corresponding one of the analog signals (Figure 3 column 5 lines 56-62). Cimini1 and Cimini2 teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the signal prefix technique disclosed by Cimini2 in

each of the antennas lines disclosed by Cimini1. The suggestion/motivation for doing so would have been to reduce the Inter-Symbol Interference Cimini2 column 10 line 66 to column 11 line 21). Neither Cimini1 or Cimini2 disclose that each of the N signal prefixes including multiple parts and wherein the step of separately generating N signal prefixes includes, for each one of the N analog signals generating a first cyclic prefix part from the included periodic signal representing the current symbol; and generating a second prefix part from the included periodic signal the beginning of the generated second prefix part having the same phase as the end of the periodic signal representing the preceding symbol and the end of the generated second prefix part having the same phase as the beginning of the first cyclic prefix part. Jones discloses that the prefixes including multiple parts and wherein the step of separately generating N signal prefixes includes, for each one of the N analog signals generating a first cyclic prefix part from the included periodic signal representing the current symbol; and generating a second prefix part from the included periodic signal the beginning of the generated second prefix part having the same phase as the end of the periodic signal representing the preceding symbol and the end of the generated second prefix part having the same phase as the beginning of the first cyclic prefix part (figure 5 block 504 column 6 line 58 to column 7 line 6). Cimini1, Cimini2 and Jones are analogous art because they are from the same field of endeavor. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to integrate in the multi-tone method disclosed by Cimini1 and Cimini2 the supplemental cyclic prefix disclosed by Jones. The suggestion/motivation for doing so would have been to facilitate synchronization

(Jones abstract). Therefore, it would have been obvious to combine Cimini1, Cimini2 with Jones to obtain the invention as specified in claim 9.

As per claim 10 Cimini1, Cimini2 and Jones disclose claim 6. Cimini2 also discloses that the periodic signals are a sinusoidal waves (column 5 line 35 equation 1). Cimini1, Cimini2 and Jones are analogous art because they are from the same field of endeavor. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to integrate in the multi-tone method disclosed by Cimini1 and Cimini2 the supplemental cyclic prefix disclosed by Jones. The suggestion/motivation for doing so would have been to facilitate synchronization (Jones abstract). Therefore, it would have been obvious to combine Cimini1, Cimini2 with Jones to obtain the invention as specified in claim 10.

As per claim 41 Cimini1 discloses a method of sequentially transmitting symbols in a multi-tone signal communication system using N tones per symbol period, wherein the N tones remain the same for multiple symbol periods, the time period in which the N tones remain the same (figure 3 column 3 lines 11-14) being a dwell, the method comprising selecting a symbol to be transmitted from a constellation of symbols to be transmitted using a signal corresponding to one of said N tones (figure 1 column 3 lines 9-46); and transmitting N signals corresponding to each one of the N tones of the multi-tone signal, each one of the N signals being transmitted on a corresponding one of a first plurality of antennas, the antenna being used to transmit signals corresponding to a particular tone during the dwell remaining the same throughout the dwell (figure 3 column 3 lines 14-24). Cimini1 doesn't disclose rotating a constellation of symbols from

which consecutive symbols are transmitted using one of said N tones by a fixed amount and a function of the duration of a multi-part prefix to be transmitted with the selected symbol, wherein said fixed amount by which the constellation of symbols is rotated is a function of the tone frequency. Jones discloses rotating a constellation of symbols from which consecutive symbols are transmitted using one of said N tones by a fixed amount and a function of the duration of a multi-part prefix to be transmitted with the selected symbol, wherein said fixed amount by which the constellation of symbols is rotated is a function of the tone frequency (figure 5 block 504 column 6 line 58 to column 7 line 6. It is very well known that a delay using a prefix in the time domain is equivalent to a rotation in the frequency domain see US 6807241 B1 column 2 lines 4-17). Cimini1, Cimini2 and Jones are analogous art because they are from the same field of endeavor. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to integrate in the multi-tone method disclosed by Cimini1 and Cimini2 the supplemental cyclic prefix disclosed by Jones. The suggestion/motivation for doing so would have been to facilitate synchronization (Jones abstract). Therefore, it would have been obvious to combine Cimini1, Cimini2 with Jones to obtain the invention as specified in claim 41.

As per claim 42 Cimini1 discloses that for each symbol transmission period of a second time transmitting N signals corresponding to each one of the N tones of the multi-tone signal, each one of the N signals being transmitted on a corresponding one of a second plurality of antennas, the antenna being used to transmit signals corresponding to a particular tone during the second dwell remaining the same

throughout the second dwell, the second plurality of antennas including at least one antenna which is different from the antennas included the first plurality of antennas (figure 3 column 5 lines 9-27 and 31-34). Cimini1, Cimini2 and Jones are analogous art because they are from the same field of endeavor. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to integrate in the multi-tone method disclosed by Cimini1 and Cimini2 the supplemental cyclic prefix disclosed by Jones. The suggestion/motivation for doing so would have been to facilitate synchronization (Jones abstract). Therefore, it would have been obvious to combine Cimini1, Cimini2 with Jones to obtain the invention as specified in claim 42.

As per claim 43 Cimini1 discloses that for each of a plurality of symbol transmission periods rotating the constellation of symbols from which consecutive symbols are transmitted using one of said N tones by a fixed amount (figures 1 and 3; column 3 lines 9-46 and column 5 lines 13-14); and selecting a symbol to be transmitted from a constellation of symbols to be transmitted using a signal corresponding to one of N tones (figures 1 and 3; column 3 lines 9-46 and column 5 lines 15-27). Cimini1, Cimini2 and Jones are analogous art because they are from the same field of endeavor. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to integrate in the multi-tone method disclosed by Cimini1 and Cimini2 the supplemental cyclic prefix disclosed by Jones. The suggestion/motivation for doing so would have been to facilitate synchronization (Jones abstract). Therefore, it would have been obvious to combine Cimini1, Cimini2 with Jones to obtain the invention as specified in claim 43.

As per claim 44 Cimini1 discloses that the rotation of the constellation during each of the plurality of symbol transmission period has a cumulative rotational effect on the constellation from which symbols are selected causing the rotation of the symbols in one symbol transmission period to effect the constellation from which symbols are selected during the next symbol transmission period (figure 3 column 5 lines 15-27, lines 28-31). Cimini1, Cimini2 and Jones are analogous art because they are from the same field of endeavor. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to integrate in the multi-tone method disclosed by Cimini1 and Cimini2 the supplemental cyclic prefix disclosed by Jones. The suggestion/motivation for doing so would have been to facilitate synchronization (Jones abstract). Therefore, it would have been obvious to combine Cimini1, Cimini2 with Jones to obtain the invention as specified in claim 44.

As per claim 45 Cimini1 discloses that the rotation of the constellation during each of the plurality of symbol transmission periods is by a fixed additive amount which does not effect the position of the symbols in the constellation from which the next symbol is selected (figure 3 column 5 lines 15-27, lines 28-31). Cimini1, Cimini2 and Jones are analogous art because they are from the same field of endeavor. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to integrate in the multi-tone method disclosed by Cimini1 and Cimini2 the supplemental cyclic prefix disclosed by Jones. The suggestion/motivation for doing so would have been to facilitate synchronization (Jones abstract). Therefore, it would have been

obvious to combine Cimini1, Cimini2 with Jones to obtain the invention as specified in claim 45.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cimini1, Cimini2 and Jones as applied to claim 6 above, and further in view of Behrens (US 5903857 A). Cimini1, Cimini2 and Jones disclose claim 6. Cimini1, Cimini2 and Jones don't disclose that periodic signals is a square wave. Behrens discloses the use of a square wave as a periodic signal (figure 8A column 11 line 30 to column 12 line 10). Cimini1, Cimini2, Jones and Behrens teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the square periodic signal disclosed by Behrens in each of the multi-tone method disclosed by Cimini1, Cimini2 and Jones. The suggestion/motivation for doing so would have been to use a signal with even numbered harmonics that are zero and the odd numbered harmonics decrease in amplitude by approximately a factor of $1/n$ (Behrens column 11 lines 30-39). Therefore, it would have been obvious to combine Cimini1, Cimini2 and Jones with Behrens to obtain the invention as specified in claim 11.

Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cimini1 in view of Chalmers (US 5668802) and further in view of Behrens (US 5903857 A).

As per claim 12 Cimini1 discloses a multi-tone signal communications method for communicating information using N tones, where N is a positive integer greater than one, the method comprising: generating in parallel, for each one of the N tones, a

separate periodic signal (figure 3 column 3 lines 14-23); and transmitting the generated periodic signals into a communications channel (figure 3 column 4 lines 29-34). Cimini1 doesn't disclose that at least one high order harmonic signal component that is different from the fundamental frequency signal component of the tone. Chalmers discloses that the generated periodic signals include a high order harmonic signal component in addition to a fundamental frequency signal component, the high order harmonic signal component having a frequency which is higher than the frequency of the fundamental signal component (Figure 1 & 2 column 1 lines 51-53). Cimini and Chalmers teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to combine the technique of generated periodic signals include a high order harmonic signal component disclosed by Chalmers with the OFDM system disclosed by Cimini. The suggestion/motivation for doing so would have been to reduce the complexity of the system. Cimini1 and Chalmers don't disclose that periodic signals is a square wave. Behrens discloses the use of a square wave as a periodic signal (figure 8A column 11 line 30 to column 12 line 10). Cimini1 and Chalmers and Behrens teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the square periodic signal disclosed by Behrens in each of the multi-tone method disclosed by Cimini1 and Chalmers. The suggestion/motivation for doing so would have been to use a signal with even numbered harmonics that are zero and the odd numbered harmonics decrease in amplitude by approximately a factor of $1/n$ (Behrens

column 11 lines 30-39). Therefore, it would have been obvious to combine Cimini1 and Chalmers with Behrens to obtain the invention as specified in claim 12.

As per claim 13 Cimini1, Chalmers with Behrens disclose claim 12. Behrens also discloses that the periodic signal includes multiple high order harmonic signal components (figure 8A column 11 line 30 to column 12 line 10). Cimini1 and Chalmers and Behrens teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the square periodic signal disclosed by Behrens in each of the multi-tone method disclosed by Cimini1 and Chalmers. The suggestion/motivation for doing so would have been to use a signal with even numbered harmonics that are zero and the odd numbered harmonics decrease in amplitude by approximately a factor of $1/n$ (Behrens column 11 lines 30-39). Therefore, it would have been obvious to combine Cimini1 and Chalmers with Behrens to obtain the invention as specified in claim 13.

Claims 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cimini1, Chalmers and Behrens as applied to claim 12 above, and further in view of Walton (US Patent Application Publication 20020154705).

As per claim 15 Cimini1, Chalmers and Behrens disclose claim 12. Cimini1, Chalmers and Behrens don't disclose generating, in parallel, for each one of the tones, a separate periodic signal prefix. Walton discloses generating, in parallel, for each one of the tones, a separate periodic signal prefix (Figure 3 block 322 page 9 paragraph [0105]). Cimini1, Chalmers, Behrens and Walton teachings are analogous art because

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they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify the system disclosed by Cimini1, Chalmers and Behrens with the signal prefix disclosed by Walton in each of tones. The suggestion/motivation for doing so would have been to insure that the transmission symbol retains its orthogonal properties in the presence of multipath delay spread, thereby improving performance against deleterious path effects reduce the Inter-Symbol Interference and equivalently to reduce the Inter-Symbol Interference (Walton page 9 paragraph [0105]). Therefore, it would have been obvious to combine Cimini1, Chalmers and Behrens with Walton to obtain the invention as specified in claim 15.

As per claim 17 Cimini1, Chalmers, Behrens and Walton disclose claim 15. Walton also discloses combining in the passband, the periodic signal corresponding to the one of the N tones with the corresponding one of the N periodic signal prefixes (Figure 3 block 322 page 9 paragraph [0105]). Cimini1, Chalmers, Behrens and Walton teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify the system disclosed by Cimini1, Chalmers and Behrens with the signal prefix disclosed by Walton in each of tones. The suggestion/motivation for doing so would have been to insure that the transmission symbol retains its orthogonal properties in the presence of multipath delay spread, thereby improving performance against deleterious path effects reduce the Inter-Symbol Interference and equivalently to reduce the Inter-Symbol Interference (Walton page 9 paragraph [0105]). Therefore, it would have been

obvious to combine Cimini1, Chalmers and Behrens with Walton to obtain the invention as specified in claim 17.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cimini1, Chalmers, Behrens and Walton as applied to claim 15 above, and further in view of Jones (US 6876675 B1).

As per claim 16 Cimini1, Chalmers, Behrens and Walton disclose claim 15. Cimini1, Chalmers, Behrens and Walton don't disclose generating a cyclic prefix portion; and generating a continuity signal portion, the continuity signal portion being generated as a function of a previously generated periodic signal and the current generated periodic signal. Jones discloses generating a cyclic prefix portion; and generating a continuity signal portion, the continuity signal portion being generated as a function of a previously generated periodic signal and the current generated periodic signal (figure 5 block 504 column 6 line 58 to column 7 line 6). Cimini1, Cimini2 and Jones are analogous art because they are from the same field of endeavor. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to integrate in the multi-tone method disclosed by Cimini1 and Cimini2 the supplemental cyclic prefix disclosed by Jones. The suggestion/motivation for doing so would have been to facilitate synchronization (Jones abstract). Therefore, it would have been obvious to combine Cimini1, Cimini2 with Jones to obtain the invention as specified in claim 16.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cimini1, Cimini2 and Jones as applied to claim 4 above, and further in view of Walton (US

Patent Application Publication 20020154705). Cimini1, Cimini2 and Jones disclose claim 4. Cimini1, Cimini2 and Jones don't disclose that the periodic signals and signal prefixes are generated in the passband. Walton also discloses that the periodic signals and signal prefixes are generated in the passband (Figure 3 block 322 page 9 paragraph [0105]). Cimini1, Cimini2, Jones and Walton teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the signal prefix technique disclosed by Walton in each of the multi-tone method disclosed by Cimini1, Cimini2, Jones. The suggestion/motivation for doing so would have been to insure that the transmission symbol retains its orthogonal properties in the presence of multipath delay spread, thereby improving performance against deleterious path effects reduce the Inter-Symbol Interference and equivalently to reduce the Inter-Symbol Interference (Walton page 9 paragraph [0105]). Therefore, it would have been obvious to combine Cimini1, Cimini2 and Jones with Walton to obtain the invention as specified in claim 5.

Claims 18, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cimini1 in view of Cimini2.

As per claim 18 Cimini1 discloses a multi-tone signal communications method for communicating information using at least $N \times M$ tones, where $N \times M$ is a positive integer greater than one, the method comprising (Figure 3 column 3 lines 14-20): separately generating, for each one of the $N \times M$ tones, a passband periodic signal representing a symbol (Figure 3 column 3 lines 18-19); and transmitting the $N \times M$ generated passband periodic signals (Figure 3 column 4 lines 53-55). Cimini1 doesn't specifically disclose

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that at least some of the N generated passband periodic signals include a high order harmonic signal component in addition to a fundamental frequency signal component, the high order harmonic signal component having a frequency which is higher than the frequency of the fundamental signal component. It is very well known and inherently to the use of the DFT and Cimini2 discloses that at least some of the N generated passband periodic signals include a high order harmonic signal component in addition to a fundamental frequency signal component, the high order harmonic signal component having a frequency which is higher than the frequency of the fundamental signal component (column 5 line 35 equation 1). Cimini1 and Cimini2 teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the signal prefix technique disclosed by Cimini2 in each of the antennas lines disclosed by Cimini1. The suggestion/motivation for doing so would have been to reduce the Inter-Symbol Interference (Cimini2 column 10 line 66 to column 11 line 21). Therefore, it would have been obvious to combine Cimini1 with Cimini2 to obtain the invention as specified in claim 18.

As per claim 19 Cimini1 and Cimini2 disclose claim 18 Cimini1 also discloses that the passband periodic signals for each one of the NxM tones are generated in parallel (Figure 3 column 4 lines 53-55); and wherein the step of transmitting the NxM generated passband periodic signals includes broadcasting different ones of said NxM passband periodic signals using different antennas (M) (Figure 3 column 3 lines 14-21). Cimini1 and Cimini2 teachings are analogous art because they are from the same field

of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the signal prefix technique disclosed by Cimini2 in each of the antennas lines disclosed by Cimini1. The suggestion/motivation for doing so would have been to reduce the Inter-Symbol Interference Cimini2 column 10 line 66 to column 11 line 21). Therefore, it would have been obvious to combine Cimini1 with Cimini2 to obtain the invention as specified in claim 19.

As per claim 20 Cimini1 and Cimini2 disclose claim 18 Cimini1 also discloses that the combination of N generated passband periodic signals prior to transmission (Figure 3 column 3 lines 14-15). Cimini1 and Cimini2 teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the signal prefix technique disclosed by Cimini2 in each of the antennas lines disclosed by Cimini1. The suggestion/motivation for doing so would have been to reduce the Inter-Symbol Interference Cimini2 column 10 line 66 to column 11 line 21). Therefore, it would have been obvious to combine Cimini1 with Cimini2 to obtain the invention as specified in claim 20.

Claims 22, 51-55 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cimini1 and Cimini2, and further in view of Behrens (US 5903857 A).

As per claim 22 Cimini1 and Cimini2 disclose claim 18. Cimini1 and Cimini2 don't disclose that periodic signals is a square wave. Behrens discloses the use of a square wave as a periodic signal (figure 8A column 11 line 30 to column 12 line 10). Cimini1, Cimini2 and Behrens teachings are analogous art because they are from the same field

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of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the square periodic signal disclosed by Behrens in each of the multi-tone method disclosed by Cimini1 and Cimini2. The suggestion/motivation for doing so would have been to use a signal with even numbered harmonics that are zero and the odd numbered harmonics decrease in amplitude by approximately a factor of $1/n$ (Behrens column 11 lines 30-39). Therefore, it would have been obvious to combine Cimini1 and Cimini2 with Behrens to obtain the invention as specified in claim 22.

As per claim 51 Cimini1 discloses a system for generating and transmitting signals corresponding to an N tone multi-tone signal, where N is a positive integer greater than 1, the system comprising N periodic signal generator circuits for generating periodic signals, each periodic signal corresponding to a different tone one of the N tones of the multi-tone signal (Figure 3 column 3 lines 15-23). Cimini1 doesn't disclose the use of prefix signals. Cimini2 discloses prefix generator circuits for independently generating periodic signal prefixes, each one of the N prefix generator circuits being coupled to a different corresponding one of the N periodic generator circuits (figure 2 block 41 column 5 lines 56-62). Cimini1 and Cimini2 teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the signal prefix technique disclosed by Cimini2 in each of the antennas lines disclosed by Cimini1. The suggestion/motivation for doing so would have been to reduce the Inter-Symbol Interference (Cimini2 column 10 line 66 to column 11 line 21). Cimini1 and Cimini2 don't

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disclose that periodic signals is a square wave. Behrens discloses the use of a square wave as a periodic signal (figure 8A column 11 line 30 to column 12 line 10). Cimini1, Cimini2 and Behrens teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the square periodic signal disclosed by Behrens in each of the multi-tone method disclosed by Cimini1 and Cimini2. The suggestion/motivation for doing so would have been to use a signal with even numbered harmonics that are zero and the odd numbered harmonics decrease in amplitude by approximately a factor of $1/n$ (Behrens column 11 lines 30-39). Therefore, it would have been obvious to combine Cimini1 and Cimini2 with Behrens to obtain the invention as specified in claim 51.

As per claim 52 Cimini1, Cimini2 and Behrens disclose claim 51. Cimini1 also discloses N filters for independently filtering the N periodic signals including prefixes generated by the N prefix generator circuits, each one of the N filters being coupled to a different corresponding one of the N prefix generator circuits (figure 3 column 3 line 18). Cimini1, Cimini2 and Behrens teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the square periodic signal disclosed by Behrens in each of the multi-tone method disclosed by Cimini1 and Cimini2. The suggestion/motivation for doing so would have been to use a signal with even numbered harmonics that are zero and the odd numbered harmonics decrease in amplitude by approximately a factor of $1/n$ (Behrens column 11 lines 30-39). Therefore,

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it would have been obvious to combine Cimini1 and Cimini2 with Behrens to obtain the invention as specified in claim 52.

As per claim 53 Cimini1, Cimini2 and Behrens disclose claim 51. Cimini1 also discloses a plurality of M antennas, where M is an integer and where (figure 3 column 3 line 14-20), each of the N filters being coupled to a single one of the M antennas and each one of the M antennas being coupled to at least one of the N filters (figure 3 column 3 line 18). Cimini1, Cimini2 and Behrens teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the square periodic signal disclosed by Behrens in each of the multi-tone method disclosed by Cimini1 and Cimini2. The suggestion/motivation for doing so would have been to use a signal with even numbered harmonics that are zero and the odd numbered harmonics decrease in amplitude by approximately a factor of $1/n$ (Behrens column 11 lines 30-39). Therefore, it would have been obvious to combine Cimini1 and Cimini2 with Behrens to obtain the invention as specified in claim 53.

As per claim 54 Cimini1, Cimini2 and Behrens disclose claim 51. Cimini1 also discloses $M=N$ (figure 3 column 4 line 53-55). Cimini1, Cimini2 and Behrens teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the square periodic signal disclosed by Behrens in each of the multi-tone method disclosed by Cimini1 and Cimini2. The suggestion/motivation for doing so would have been to use a signal with even numbered harmonics that are zero and the odd

numbered harmonics decrease in amplitude by approximately a factor of $1/n$ (Behrens column 11 lines 30-39). Therefore, it would have been obvious to combine Cimini1 and Cimini2 with Behrens to obtain the invention as specified in claim 54.

As per claim 55 Cimini1, Cimini2 and Behrens disclose claim 51. Cimini1 also discloses $M < N$, the system further comprising, at least one analog combing circuit for combining signals from a subset of said N filters into a signal filter and for coupling each filter in the subset of said N filters one of said M antennas (figure 3 column 4 line 13-19). Cimini1, Cimini2 and Behrens teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the square periodic signal disclosed by Behrens in each of the multi-tone method disclosed by Cimini1 and Cimini2. The suggestion/motivation for doing so would have been to use a signal with even numbered harmonics that are zero and the odd numbered harmonics decrease in amplitude by approximately a factor of $1/n$ (Behrens column 11 lines 30-39). Therefore, it would have been obvious to combine Cimini1 and Cimini2 with Behrens to obtain the invention as specified in claim 55.

As per claim 57 Cimini1, Cimini2 and Behrens disclose claim 51. Cimini2 also discloses each of the N prefix generator circuits generates a separate prefix, each one of the N separate prefixes having the same duration (figure 2 column 5 line 58-62). Cimini1, Cimini2 and Behrens teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to integrate the square periodic signal disclosed by

Behrens in each of the multi-tone method disclosed by Cimini1 and Cimini2. The suggestion/motivation for doing so would have been to use a signal with even numbered harmonics that are zero and the odd numbered harmonics decrease in amplitude by approximately a factor of $1/n$ (Behrens column 11 lines 30-39). Therefore, it would have been obvious to combine Cimini1 and Cimini2 with Behrens to obtain the invention as specified in claim 57.

Claims 23, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cimini1 and Cimini2 as applied to claim 18 above, and further in view of Walton (US Patent Application Publication 20020154705).

As per claim 23 Cimini1 and Cimini2 disclose claim 18. Cimini1 and Cimini2 don't disclose the generation of a separate prefix for each of the generated passband periodic signals; and combining, prior to transmission, each one of the separate prefixes with the corresponding one of the generated passband periodic signals. Walton discloses the generation of a separate prefix for each of the generated passband periodic signals (figure 3 blocks 322a-322t paragraphs [0098]-[0107]); and combining, prior to transmission, each one of the separate prefixes with the corresponding one of the generated passband periodic signals (figure 3 blocks 114a-114t paragraphs [0098]-[0107]). Cimini1, Cimini2 and Walton teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify the system disclosed by Cimini1, and Cimini2 with the signal prefix disclosed by Walton. The suggestion/motivation for doing so would have been to insure that the transmission symbol retains its orthogonal

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properties in the presence of multipath delay spread, thereby improving performance against deleterious path effects reduce the Inter-Symbol Interference and equivalently to reduce the Inter-Symbol Interference (Walton page 9 paragraph [0105]). Therefore, it would have been obvious to combine Cimini1 and Cimini2 with Walton to obtain the invention as specified in claim 23.

As per claim 24 Cimini1, Cimini2 and Walton disclose claim 23. Walton also discloses that the prefixes for each of the N passband periodic signals are generated in parallel (figure 3 blocks 322a-322t paragraphs [0098]-[0107]). Cimini1, Cimini2 and Walton teachings are analogous art because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify the system disclosed by Cimini1, and Cimini2 with the signal prefix disclosed by Walton. The suggestion/motivation for doing so would have been to insure that the transmission symbol retains its orthogonal properties in the presence of multipath delay spread, thereby improving performance against deleterious path effects reduce the Inter-Symbol Interference and equivalently to reduce the Inter-Symbol Interference (Walton page 9 paragraph [0105]). Therefore, it would have been obvious to combine Cimini1 and Cimini2 with Walton to obtain the invention as specified in claim 24.

As per claim 25 Cimini1, Cimini2 and Walton disclose claim 23. Walton also discloses pre-pending the generated prefix to the corresponding one of the N generated passband periodic signals (figure 3 blocks 322a-322t paragraphs [0098]-[0107]). Cimini1, Cimini2 and Walton teachings are analogous art because they are from the

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same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify the system disclosed by Cimini1, and Cimini2 with the signal prefix disclosed by Walton. The suggestion/motivation for doing so would have been to insure that the transmission symbol retains its orthogonal properties in the presence of multipath delay spread, thereby improving performance against deleterious path effects reduce the Inter-Symbol Interference and equivalently to reduce the Inter-Symbol Interference (Walton page 9 paragraph [0105]). Therefore, it would have been obvious to combine Cimini1 and Cimini2 with Walton to obtain the invention as specified in claim 25.

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cimini1, Cimini2 and Walton as applied to claim 23 above, and further in view of Jones (US 6876675 B1). Cimini1, Cimini2 and Walton disclose claim 23. Cimini1, Cimini2 and Walton don't disclose generating a first cyclic prefix part (figure 5 block 502 column 6 line 58 to column 7 line 6); and generating a second prefix part, the second prefix part being generated using a different generation technique than the first prefix part (figure 5 block 504 column 6 line 58 to column 7 line 6). Jones discloses generating a first cyclic prefix part; and generating a second prefix part, the second prefix part being generated using a different generation technique than the first prefix part. Cimini1, Cimini2, Walton and Jones are analogous art because they are from the same field of endeavor. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to integrate in the multi-tone method disclosed by Cimini1 and Cimini2 the supplemental cyclic prefix disclosed by Jones. The suggestion/motivation for doing so would have

been to facilitate synchronization (Jones abstract). Therefore, it would have been obvious to combine Cimini1, Cimini2 and Walton with Jones to obtain the invention as specified in claim 26.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juan A. Torres whose telephone number is (571) 272-3119. The examiner can normally be reached on Monday-Friday 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H. Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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08-20-2005


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